



ICF international / Laboratory Data Consultants

Environmental Services Assistance Team, Region 9
 1337 South 46th Street, Building 201, Richmond, CA 94804-4698
 Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Lynda Deschambault, Remedial Project Manager
 Site Cleanup Section 1, SFD-7-1

THROUGH: Rose Fong, ESAT Task Order Manager (TOM)
 Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager
 Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: EP-W-06-041
 Technical Direction Form No.: 00405083

DATE: October 29, 2009

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC QB02
CERCLIS ID NO.:	CAD042245001
Case No.:	38845
SDG No.:	Y4ZA6
Laboratory:	DataChem Laboratories, Inc. (DATAC)
Analysis:	Trace Volatiles
Samples:	20 Ground Water Samples (see Case Summary)
Collection Date:	September 1 through 3, 2009
Reviewer:	April Martinez, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOM for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Carol Beard, CLP PO USEPA Region 6
 Steve Remaley, CLP PO USEPA Region 9

CLP PO: Attention Action

SAMPLING ISSUES: Yes No

Data Validation Report - Tier 3

Case No.: 38845
SDG No.: Y4ZA6
Site: Omega Chem OU2
Laboratory: DataChem Laboratories, Inc. (DATAC)
Reviewer: April Martinez, ESAT/LDC
Date: October 29, 2009

I. CASE SUMMARY

Sample Information

Samples: Y4ZA6 through Y4ZC5
Concentration and Matrix: Low Concentration Water
Analysis: Trace Volatiles
SOW: SOM01.2
Collection Date: September 1 through 3, 2009
Sample Receipt Date: September 3 and 4, 2009
Extraction Date: Not Applicable
Analysis Date: September 8 through 10, 2009

Field QC

Field Blanks (FB): Y4ZA9 and Y4ZC5
Equipment Blanks (EB): Not provided
Trip Blanks (TB): Not provided
Background Samples (BG): Not provided
Field Duplicates (D1): Y4ZB7 and Y4ZB8

Laboratory QC

Method Blanks & Associated Samples:

VBLKT1: Y4ZA6, Y4ZA7, Y4ZA8, Y4ZB3, Y4ZB3MS,
Y4ZB3MSD, Y4ZB3DL, Y4ZB5, Y4ZB6DL, Y4ZC0,
Y4ZC4
VBLKT2: Y4ZA9 through Y4ZB2, Y4ZB4, Y4ZB5DL,
Y4ZB8DL through Y4ZC2DL
VBLKT3: Y4ZB6 through Y4ZB9, Y4ZC1 through Y4ZC3,
Y4ZC3DL, Y4ZC4DL, Y4ZC5; storage blank
VHBLKT1

Tables

- 1A: Analytical Results with Qualifications
- 1B: Data Qualifier Definitions for Organic Data Review
- 2: Calibration Summary

CLP PO Action

None.

CLP PO Attention

1. Detected results for (1) tetrachloroethene in samples Y4ZA6, Y4ZB1, Y4ZB4, and Y4ZC5 and (2) chloromethane in sample Y4ZB8 are qualified as nondetected and estimated (U,J) due to storage blank and field blank contamination (see Comment B).
2. Results for some analytes are qualified as estimated (J) due to low relative response factors (RRFs) in initial calibration and continuing calibration verifications (CCVs) (see Comment C).
3. Results for some analytes are qualified as estimated (J) due to high deuterated monitoring compound (DMC) recoveries (see Comment D).

Sampling Issues

1. The detected result for chloromethane in sample Y4ZB8 is qualified as nondetected and estimated (U,J) due to a field blank contamination (see Comment B).
2. Samples Y4ZA6 through Y4ZB6 were received by the laboratory with a cooler temperature of 9°C, which exceeds the $4\pm2^{\circ}\text{C}$ sample preservation criterion. Since the cooler temperature is below 10°C, no adverse effect on data quality is expected.
3. The laboratory indicated on sample log-in sheets that the cooler temperature indicator bottle was absent from four of the five coolers (refer to pages 672 through 676 in the data package).

Additional Comments

In addition to laboratory artifacts (approximate retention times of 11.4, 18.3, and 21.0 minutes), tentatively identified compounds (TICs) were found in samples Y4ZB5, Y4ZB6, Y4ZB9, and Y4ZC1 (see attached Form 1Js).

The laboratory performed manual integrations on calibrations and samples due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services Volatile and Semivolatile Data Packages*;
- USEPA *Contract Laboratory Program Statement of Work for Organics Analysis, Multi-Media, Multi-Concentration*, SOM01.1, May 2005;
- *Modifications Updating SOM01.1 to SOM01.2*, Amended April 11, 2007; and

- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

<u>Parameter</u>	<u>Acceptable</u>	<u>Comment</u>
1. Holding Time/Preservation	Yes	
2. GC/MS Tune/GC Performance	Yes	
3. Initial Calibration	No	C
4. Continuing Calibration Verification	No	C
5. Laboratory Blanks	No	B
6. Field Blanks	No	B
7. Deuterated Monitoring Compounds	No	D
8. Matrix Spike/Matrix Spike Duplicate	Yes	
9. Laboratory Control Sample/Duplicate	N/A	
10. Internal Standards	Yes	
11. Compound Identification	Yes	
12. Compound Quantitation	Yes	A, E, F
13. System Performance	Yes	
14. Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

- A. The following results, denoted with an “L” qualifier, are estimated and flagged “J” in Table 1A.

- All detected results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

- B. The following results are qualified as nondetected and estimated due to storage blank and field blank contamination and are flagged “U,J” in Table 1A.

- Tetrachloroethene in samples Y4ZA6, Y4ZB1, Y4ZB4, and Y4ZC5
- Chloromethane in sample Y4ZB8

Tetrachloroethene was found in storage blank VHBLKT1 and chloromethane was found in field blank Y4ZC5 (see Table 1A for concentrations). Results for the samples listed above are considered nondetected and estimated (U,J) and quantitation limits have been raised according to blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result and reported as nondetected. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

A field blank is clean water prepared as a sample in the field by the sampler and shipped to the laboratory with the samples. A field blank is intended to detect contaminants that may have been introduced in the field, although any laboratory introduced contamination will be present. Contaminants that are found in the field blank which are absent in the laboratory method blank could be indicative of a field QC problem, a deficiency in the bottle preparation procedure, a difference in preparation of the laboratory and field blanks, or other indeterminate error.

C. Results for the following analytes are qualified as estimated due to low RRFs in initial calibration and CCVs and are flagged "J" in Table 1A.

- Acetone in all samples, all method blanks, and storage blank VHBLKT1
- 2-Butanone in samples Y4ZA6, Y4ZA7, Y4ZA8, Y4ZB3, Y4ZB5, Y4ZC0, and Y4ZC4 and method blank VBLKT1

RRFs were below the 0.05 validation criterion for acetone in the initial calibration and CCVs and for 2-butanone in the CCVs (see Table 2). Detected results for acetone should be considered as the minimum concentrations at which it is present in the samples. Where results are nondetected, false negatives may exist.

DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the CCVs (see Table 2). Quantitation of the analytes associated with these DMCs (acetone, 2-butanone, 4-methyl-2-pentanone, and 2-hexanone) may have been affected by low RRFs.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results for the following analytes are qualified as estimated due to high DMC recoveries and are flagged "J" in Table 1A.

{1,1-Dichloroethene-d2}

- trans-1,2-Dichloroethene and cis-1,2-dichloroethene in samples Y4ZB5 and Y4ZB6
- 1,1-Dichloroethene and cis-1,2-dichloroethene in samples Y4ZB7 and Y4ZC4

- 1,1-Dichloroethene, trans-1,2-dichloroethene, and cis-1,2-dichloroethene in samples Y4ZB9 and Y4ZC1

DMC recoveries outside QC limits are shown below.

<u>Sample</u>	<u>DMC</u>	<u>% Recovery</u>	<u>QC Limit</u>
Y4ZB5	1,1-Dichloroethene-d2	335	55-104
Y4ZB6	1,1-Dichloroethene-d2	278	55-104
Y4ZB7	1,1-Dichloroethene-d2	106	55-104
Y4ZB9	1,1-Dichloroethene-d2	473	55-104
Y4ZB9DL	1,1-Dichloroethene-d2	114	55-104
Y4ZC1	1,1-Dichloroethene-d2	410	55-104
Y4ZC1DL	1,1-Dichloroethene-d2	109	55-104
Y4ZC4	1,1-Dichloroethene-d2	112	55-104

Qualified results may be biased high. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. The samples were not reanalyzed undiluted.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

- E. Samples Y4ZB3, Y4ZC0, and Y4ZC4 were reanalyzed at 5-, 2-, and 5-fold dilutions, respectively, due to high levels of trichloroethene and tetrachloroethene that exceeded the calibration range. Results for these analytes in samples Y4ZB3, Y4ZC0, and Y4ZC4 are reported from the diluted analyses in Table 1A; results for other analytes are reported from the undiluted analyses.

Samples Y4ZB5, Y4ZB9, and Y4ZC1 were reanalyzed at 40-, 50-, and 50-fold dilutions, respectively, due to high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes in samples Y4ZB5, Y4ZB9, and Y4ZC1 are reported from the 40-, 50-, and 50-fold diluted analyses in Table 1A; results for other analytes are reported from the 2-, 5-, and 5-fold diluted analyses.

Sample Y4ZB6 was reanalyzed at a 50-fold dilution due to high levels of 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes in sample Y4ZB6 are reported from the 50-fold diluted analysis in Table 1A; results for other analytes are reported from the 5-fold diluted analysis.

Sample Y4ZB7 was reanalyzed at a 10-fold dilution due to high levels of 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes in sample Y4ZB7 are reported from the diluted analysis in Table 1A; results for other analytes are reported from the undiluted analysis.

Sample Y4ZB8 was reanalyzed at a 10-fold dilution due to high levels of 1,1,2-trichloro-1,2,2-trifluoroethane and trichloroethene that exceeded the calibration range. Results for these analytes in sample Y4ZB8 are reported from the diluted analysis in Table 1A; results for other analytes are reported from the undiluted analysis.

Sample Y4ZC2 was reanalyzed at a 5-fold dilution due to a high level of trichloroethene that exceeded the calibration range. The result for trichloroethene in sample Y4ZC2 is reported from the diluted analysis in Table 1A; results for other analytes are reported from the undiluted analysis.

Sample Y4ZC3 was reanalyzed at a 5-fold dilution due to a high level of tetrachloroethene that exceeded the calibration range. The result for tetrachloroethene in sample Y4ZC3 is reported from the diluted analysis in Table 1A; results for other analytes are reported from the undiluted analysis.

- F. Sample Y4ZB5 was analyzed at a 2-fold dilution and samples Y4ZB6, Y4ZB9, and Y4ZC1 were analyzed at 5-fold dilutions due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor.

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Concentration in ug/L

Analysis Type :

Trace Level Water Samples for Trace Volatiles

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :	1			2			3			4			FB			5			6		
Sample ID :	Y4ZA6			Y4ZA7			Y4ZA8			Y4ZA9			Y4ZB0			Y4ZB1			Y4ZB1		
Collection Date :	9/1/2009			9/1/2009			9/1/2009			9/1/2009			9/2/2009			9/2/2009			9/2/2009		
Dilution Factor :	1.0			1.0			1.0			1.0			1.0			1.0			1.0		
Trace Volatiles	Result	Val	Com																		
1,2-Dichloropropane	0.50U																				
Bromodichloromethane	0.50U																				
cis-1,3-Dichloropropene	0.50U																				
4-Methyl-2-Pentanone	5.0U																				
Toluene	0.50U																				
trans-1,3-Dichloropropene	0.50U																				
1,1,2-Trichloroethane	0.50U																				
Tetrachloroethene	0.70U	J	B	12			8.8			0.50U			0.50U			0.50U			0.79U	J	B
2-Hexanone	5.0U																				
Dibromochloromethane	0.50U																				
1,2-Dibromoethane	0.50U																				
Chlorobenzene	0.50U																				
Ethylbenzene	0.50U																				
o-Xylene	0.50U																				
m,p-Xylene	0.50U																				
Styrene	0.50U																				
Bromoform	0.50U																				
Isopropylbenzene	0.50U																				
1,1,2,2-Tetrachloroethane	0.50U																				
1,3-Dichlorobenzene	0.50U																				
1,4-Dichlorobenzene	0.50U																				
1,2-Dichlorobenzene	0.50U																				
1,2-Dibromo-3-chloropropane	0.50U																				
1,2,4-Trichlorobenzene	0.50U																				
1,2,3-Trichlorobenzene	0.50U																				

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :	7	Sample ID :	Y4ZB2	8	Y4ZB3	9	Y4ZB4	10	Y4ZB5	11	Y4ZB6		Y4ZB7	D1				
Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009		9/3/2009					
Dilution Factor :	1.0	Dilution Factor :	1.0	Dilution Factor :	1.0	Dilution Factor :	1.0	Dilution Factor :	2.0	Dilution Factor :	5.0		1.0					
Trace Volatiles	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com			
Dichlorodifluoromethane	0.50U			0.50U			0.50U			1.0U			2.5U					
Chloromethane	0.50U			0.50U			0.50U			1.0U			2.5U					
Vinyl chloride	0.50U			0.50U			0.50U			1.0U			2.5U					
Bromomethane	0.50U			0.50U			0.50U			1.0U			2.5U					
Chloroethane	0.50U			0.50U			0.50U			1.0U			2.5U					
Trichlorofluoromethane	0.50U			0.91			0.18L	J	A	64	E	78		9.0				
1,1-Dichloroethene	0.50U			1.4			0.50U			130	E	260		6.7	J	D		
1,1,2-Trichloro-1,2,2-trifluoroethane	0.51			2.6			0.52			160	E	230		20		E		
Acetone	5.0U	J	C	5.0U	J	C	5.0U	J	C	71	J	C	100	J	C	14	J	C
Carbon disulfide	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
Methyl acetate	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
Methylene chloride	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
trans-1,2-Dichloroethene	0.50U			0.50U			0.50U			0.46L	J	AD	1.4L	J	AD	0.50U		
Methyl tert-butyl ether	0.50U			0.50U			0.50U			0.48L	J	A	0.77L	J	A	0.50U		
1,1-Dichloroethane	0.50U			0.50U			0.50U			0.67L	J	A	1.8L	J	A	0.50U		
cis-1,2-Dichloroethene	0.21L	J	A	0.41L	J	A	0.50U			8.3	J	D	15	J	D	1.3	J	D
2-Butanone	5.0U			5.0U	J	C	5.0U			10U	J	C	25U			5.0U		
Bromochloromethane	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
Chloroform	0.39L	J	A	0.56			0.50U			26			74			0.93		
1,1,1-Trichloroethane	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
Cyclohexane	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
Carbon tetrachloride	0.50U			0.13L	J	A	0.50U			1.0U			2.5U			0.24L	J	A
Benzene	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
1,2-Dichloroethane	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		
Trichloroethene	0.95			23	E		1.7			220	E		270	E		91		E
Methylcyclohexane	0.50U			0.50U			0.50U			1.0U			2.5U			0.50U		

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :	7	Sample ID :	Y4ZB2	8	Y4ZB3	9	Y4ZB4	10	Y4ZB5	11	Y4ZB6		Y4ZB7	D1	
Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009	Collection Date :	9/2/2009		9/3/2009		
Dilution Factor :	1.0	Dilution Factor :	1.0	Dilution Factor :	1.0	Dilution Factor :	1.0	Dilution Factor :	2.0	Dilution Factor :	5.0		1.0		
Trace Volatiles	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
1,2-Dichloropropane	0.50U			0.50U			0.50U			1.0U			2.5U		
Bromodichloromethane	0.50U			0.50U			0.50U			1.0U			2.5U		
cis-1,3-Dichloropropene	0.50U			0.50U			0.50U			1.0U			2.5U		
4-Methyl-2-Pentanone	5.0U			5.0U			5.0U			10U			25U		
Toluene	0.50U			0.50U			0.50U			1.0U			2.5U		
trans-1,3-Dichloropropene	0.50U			0.50U			0.50U			1.0U			2.5U		
1,1,2-Trichloroethane	0.50U			0.50U			0.50U			1.0U			2.5U		
Tetrachloroethene	7.3			69		E	0.69U	J	B	230		E	580		E
2-Hexanone	5.0U			5.0U			5.0U			10U			25U		5.0U
Dibromochloromethane	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,2-Dibromoethane	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
Chlorobenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
Ethylbenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
o-Xylene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
m,p-Xylene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
Styrene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
Bromoform	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
Isopropylbenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,1,2,2-Tetrachloroethane	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,3-Dichlorobenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,4-Dichlorobenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,2-Dichlorobenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,2-Dibromo-3-chloropropane	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,2,4-Trichlorobenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U
1,2,3-Trichlorobenzene	0.50U			0.50U			0.50U			1.0U			2.5U		0.50U

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

Case No. : 38845

SDG No. : Y4ZA6

ANALYTICAL RESULTS

Table 1A

Site : OMEGA CHEMICAL OU2
 Lab : ALS DataChem
 Reviewer : April Martinez, ESAT/LDC
 Date : 10/29/09

QUALIFIED DATA
Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :	Y4ZB8			D1			Y4ZB9			Y4ZC0			Y4ZC1			Y4ZC2			Y4ZC3		
Sample ID :	9/3/2009			9/3/2009			9/3/2009			1.0			9/3/2009			1.0			9/3/2009		
Collection Date :																					
Dilution Factor :	1.0			5.0			1.0			5.0			1.0			1.0			1.0		
Trace Volatiles	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
Dichlorodifluoromethane	0.50U			0.90L	J	A	0.50U			2.5U			0.50U			0.15L	J	A			
Chloromethane	0.50U	J	B	2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Vinyl chloride	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Bromomethane	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Chloroethane	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Trichlorofluoromethane	8.0			160		E	0.91			150		E	1.1			0.10L	J	A			
1,1-Dichloroethene	6.1			440	J	DE	2.3			390	J	DE	0.78			1.1					
1,1,2-Trichloro-1,2,2-trifluoroethane	22		E	420		E	3.7			380		E	2.0			0.54					
Acetone	13	J	C	220	J	C	5.0U	J	C	170	J	C	5.0U	J	C	5.0U	J	C	5.0U	J	C
Carbon disulfide	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Methyl acetate	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Methylene chloride	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
trans-1,2-Dichloroethene	0.50U			1.3L	J	AD	0.50U			1.3L	J	AD	0.50U			0.50U			0.50U		
Methyl tert-butyl ether	0.50U			2.3L	J	A	0.50U			1.9L	J	A	0.50U			0.50U			0.50U		
1,1-Dichloroethane	0.50U			2.1L	J	A	0.50U			1.8L	J	A	0.50U			0.50U			0.50U		
cis-1,2-Dichloroethene	1.1			11	J	D	0.95			12	J	D	0.44L	J	A	3.1					
2-Butanone	5.0U			25U			5.0U	J	C	25U			5.0U			5.0U			5.0U		
Bromochloromethane	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Chloroform	0.81			92			1.2			76			0.86			0.75					
1,1,1-Trichloroethane	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Cyclohexane	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
Carbon tetrachloride	0.23L	J	A	2.5U			0.50U			2.5U			0.18L	J	A	0.50U			0.50U		
Benzene	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U			0.50U		
1,2-Dichloroethane	0.50U			8.8			0.50U			8.1			0.50U			0.50U			0.50U		
Trichloroethene	95		E	300		E	21		E	290		E	56		E	8.1			0.50U		
Methylcyclohexane	0.50U			2.5U			0.50U			2.5U			0.50U			0.50U					

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :	Y4ZB8	D1	Y4ZB9		Y4ZC0		Y4ZC1		Y4ZC2		Y4ZC3	
Sample ID :												
Collection Date :	9/3/2009		9/3/2009		9/3/2009		9/3/2009		9/3/2009		9/3/2009	
Dilution Factor :	1.0		5.0		1.0		5.0		1.0		1.0	
Trace Volatiles	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
1,2-Dichloropropane	0.50U			2.5U			0.50U			2.5U		
Bromodichloromethane	0.50U			2.5U			0.50U			2.5U		
cis-1,3-Dichloropropene	0.50U			2.5U			0.50U			2.5U		
4-Methyl-2-Pentanone	5.0U			25U			5.0U			25U		
Toluene	0.50U			2.5U			0.50U			2.5U		
trans-1,3-Dichloropropene	0.50U			2.5U			0.50U			2.5U		
1,1,2-Trichloroethane	0.50U			2.5U			0.50U			2.5U		
Tetrachloroethene	18			580	E	19	5.0U			580	E	4.6
2-Hexanone	5.0U			25U			5.0U			25U		5.0U
Dibromochloromethane	0.50U			2.5U			0.50U			2.5U		0.50U
1,2-Dibromoethane	0.50U			2.5U			0.50U			2.5U		0.50U
Chlorobenzene	0.50U			2.5U			0.50U			2.5U		0.50U
Ethylbenzene	0.50U			2.5U			0.50U			2.5U		0.50U
o-Xylene	0.50U			2.5U			0.50U			2.5U		0.50U
m,p-Xylene	0.50U			2.5U			0.50U			2.5U		0.50U
Styrene	0.50U			2.5U			0.50U			2.5U		0.50U
Bromoform	0.50U			2.5U			0.50U			2.5U		0.50U
Isopropylbenzene	0.50U			2.5U			0.50U			2.5U		0.50U
1,1,2,2-Tetrachloroethane	0.50U			2.5U			0.50U			2.5U		0.50U
1,3-Dichlorobenzene	0.50U			2.5U			0.50U			2.5U		0.50U
1,4-Dichlorobenzene	0.50U			2.5U			0.50U			2.5U		0.50U
1,2-Dichlorobenzene	0.50U			2.5U			0.50U			2.5U		0.50U
1,2-Dibromo-3-chloropropane	0.50U			2.5U			0.50U			2.5U		0.50U
1,2,4-Trichlorobenzene	0.50U			2.5U			0.50U			2.5U		0.50U
1,2,3-Trichlorobenzene	0.50U			2.5U			0.50U			2.5U		0.50U

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Concentration in $\mu\text{g/L}$

Analysis Type :

Trace Level Water Samples for Trace Volatiles

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA
Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :	Y4ZC4			Y4ZC5			FB		Method Blank VBLKT1			Method Blank VBLKT2			Method Blank VBLKT3			Storage Blank VHBLKT1			
Sample ID :									1.0			1.0			1.0			1.0			
Collection Date :	9/3/2009			9/3/2009																	
Dilution Factor :	1.0			1.0					1.0			1.0			1.0			1.0			
Trace Volatiles	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
1,2-Dichloropropane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Bromodichloromethane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
cis-1,3-Dichloropropene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
4-Methyl-2-Pentanone	5.0U			5.0U			5.0U			5.0U			5.0U			5.0U			5.0U		
Toluene	0.50U			0.23L	J	A	0.50U			0.50U			0.50U			0.50U			0.50U		
trans-1,3-Dichloropropene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,1,2-Trichloroethane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Tetrachloroethene	44		E	0.50U	J	B	0.50U			0.50U			0.50U			0.50U			0.17L	J	A
2-Hexanone	5.0U			5.0U			5.0U			5.0U			5.0U			5.0U			5.0U		
Dibromochloromethane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,2-Dibromoethane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Chlorobenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Ethylbenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
o-Xylene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
m,p-Xylene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Styrene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Bromoform	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
Isopropylbenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,1,2,2-Tetrachloroethane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,3-Dichlorobenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,4-Dichlorobenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,2-Dichlorobenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,2-Dibromo-3-chloropropane	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,2,4-Trichlorobenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		
1,2,3-Trichlorobenzene	0.50U			0.50U			0.50U			0.50U			0.50U			0.50U			0.50U		

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

Case No. : 38845

SDG No. : Y47A6

Site : OMEGA CHEMICAL QU2

Lab : Al S DataChem

Reviewer : April Martinez, ESAT/IDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

QUALIFIED DATA

Analysis Type :

Trace Level Water Samples for Trace Volatiles

Case No. : 38845

SDG No. : Y4ZA6

Site : OMEGA CHEMICAL OU2

Lab : ALS DataChem

Reviewer : April Martinez, ESAT/LDC

Date : 10/29/09

ANALYTICAL RESULTS

Table 1A

Page 10 of 10

QUALIFIED DATA
Concentration in ug/L

Analysis Type :

Trace Level Water Samples
for Trace Volatiles

Station Location :															
Sample ID :	CRQL														
Collection Date :															
Trace Volatiles	Result	Val	Com												
1,2-Dichloropropane	0.50														
Bromodichloromethane	0.50														
cis-1,3-Dichloropropene	0.50														
4-Methyl-2-Pentanone	5.0														
Toluene	0.50														
trans-1,3-Dichloropropene	0.50														
1,1,2-Trichloroethane	0.50														
Tetrachloroethene	0.50														
2-Hexanone	5.0														
Dibromochloromethane	0.50														
1,2-Dibromoethane	0.50														
Chlorobenzene	0.50														
Ethylbenzene	0.50														
o-Xylene	0.50														
m,p-Xylene	0.50														
Styrene	0.50														
Bromoform	0.50														
Isopropylbenzene	0.50														
1,1,2,2-Tetrachloroethane	0.50														
1,3-Dichlorobenzene	0.50														
1,4-Dichlorobenzene	0.50														
1,2-Dichlorobenzene	0.50														
1,2-Dibromo-3-chloropropane	0.50														
1,2,4-Trichlorobenzene	0.50														
1,2,3-Trichlorobenzene	0.50														

Val - Validity. Refer to Data Qualifiers in Table 1B.

Com - Comments. Refer to the Corresponding Section in the Narrative for each letter.

CRQL - Contract Required Quantitation Limit

N/A - Not Applicable

NA - Not Analyzed

D1, D2, etc. - Field Duplicate Pairs

FB - Field Blank, EB - Equipment Blank,

TB - Trip Blank, BG - Background Sample

TABLE 1B
DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," June 2008.

- U The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method.
- L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
- J The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL).
- NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
- UJ The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.
- R The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

Table 2
Calibration Summary

Case No.: 38845
 SDG No.: Y4ZA6
 Site: Omega Chem OU2
 Laboratory: DataChem Laboratories, Inc.
 Reviewer: April Martinez, ESAT/LDC
 Date: October 29, 2009

RELATIVE RESPONSE FACTORS (RRF)

	<u>RRF</u>	<u>RRF</u>	<u>RRF</u>
Analysis date:	8/25/09	9/08/09	9/08/09
Analysis time:	13:38-	12:06	20:48
GC/MS I.D.:	5971-M	5971-M	5971-M
<u>Analyte</u>	<u>Initial</u>	<u>CCV</u>	<u>CCV</u>
Acetone	0.029	0.028	0.021
2-Butanone	-----	-----	0.042
2-Butanone-d5	-----	-----	0.047
2-Hexanone-d5	-----	-----	0.039
	<u>RRF</u>	<u>RRF</u>	<u>RRF</u>
Analysis date:	9/09/09	9/09/09	9/10/09
Analysis time:	11:23	19:47	11:47
GC/MS I.D.:	5971-M	5971-M	5971-M
<u>Analyte</u>	<u>CCV</u>	<u>CCV</u>	<u>CCV</u>
Acetone	0.029	0.028	0.027
2-Hexanone-d5	-----	0.045	-----
	<u>RRF</u>	<u>RRF</u>	<u>RRF</u>

ASSOCIATED SAMPLES AND METHOD BLANKS

Initial, 8/25/09: All samples, all method blanks, and storage blank VHBLKT1
CCVs, 9/08/09 12:06 and 20:48:
 Y4ZA6, Y4ZA7, Y4ZA8, Y4ZB3, Y4ZB3MS, Y4ZB3MSD, Y4ZB3DL, Y4ZB5, Y4ZB6DL,
 Y4ZC0, Y4ZC4; VBLKT1
CCVs, 9/09/09 11:23 and 19:47:
 Y4ZA9 through Y4ZB2, Y4ZB4, Y4ZB5DL, Y4ZB8DL through Y4ZC2DL; VBLKT2
CCVs, 9/10/09 11:47 and 20:55:
 Y4ZB6 through Y4ZB9, Y4ZC1 through Y4ZC3, Y4ZC3DL, Y4ZC4DL, Y4ZC5; VHBLKT1,
 VBLKT3.